

## Case Study - ULIA®

*Increase operation window, eliminates pressure induced losses in carbonate reservoir.*

**Well Location:** South-west China.

**Well Type:** Horizontal gas well. (TVD>5000m)

**Down Hole Temperature:** 293°F

**Challenges:** The carbonate reservoir formation in this region usually has low formation pressure and narrow drilling window. The designed mud density for this well was 1.18-1.22 SG and pressure induced losses was observed frequently when drilling through the carbonate reservoir formation in offset wells which had caused severe NPT.

**Solution:** To prevent NPT, Vertechs ULIA® ultra low Invasion additive was implemented in this well. After adjusting the mud density to 1.2 SG, 6 ppb ULIA® was added into the active mud system in order to strengthen the wellbore and prevent mud losses before reaching the carbonate formation at 5250m. Three shale shakers were equipped with API 160 mesh and 120 mesh screens, Vertechs High Pressure Invasion Tester (HPIT) was also used on-site to provide real-time drilling fluid performance and ULIA® concentration optimization.

**Results:** Successfully drilled to designed depth of 5950m with 300m extension without losses and wellbore instability issues, preventing NPT. The 5<sup>1</sup>/<sub>2</sub> inch production casing was later RIH and cemented successfully.